MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2015/2016

TCS2251 – COMPUTER SECURITY

(All Sections / Groups)

9 MARCH 2016
9.00 AM – 11.00 AM
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 5 pages (including cover page) with 7 Questions only.

2. Attempt **SIX** out of **SEVEN** questions. The distribution of the marks for each question is given. This paper carries **60 marks**.

3. Please print all your answers in the Answer Booklet provided.

Question 1 (10 Marks)

a) How do you stop attacks on your system from a threat? [1 mark]

b) The Principle of Adequate Protection is often used to secure a vulnerability. Explain the Principle of Adequate Protection. [2 marks]

c) What are the THREE (3) goals of computer security? [3 marks]

d) In your own words, briefly explain the FOUR(4) threat classifications on a message. [4 marks]

[Total = 1 + 2 + 3 + 4 = 10 marks]

Question 2 (10 Marks)

a) What are Program Flaws and how do they come to exist? [2 marks]

b) Programmers and developers often (nearly always) make mistakes; most of which are unintentional and non-malicious. However there are a few classes of classic error types that have enabled many security breaches. Name THREE (3) classic error types. [3 marks]

c) A virus consists of THREE (3) parts. What are they? [3 marks]

d) Given the following information, calculate the risk.
Value score: 100
Number of vulnerabilities:1; likelihood = 0.5; current control 50% effective;
Assumption: 80% accurate [2 marks]

[Total = 2 + 3 + 3 + 2 = 10 marks]

Continued ...

Question 3 (10 Marks)

a) How do two entities establish shared secret key over network? [1 mark]

b) Briefly illustrate how Bob signs a message digitally. [3 marks]

c) Briefly explain FOUR (4) types of sharing methods used by and operating system. [4 marks]

d) Suggest TWO(2) basic ways memory may be protected. [2 marks]

[Total = 1 + 3 + 4 + 2 = 10 marks]

Question 4 (10 Marks)

a) Encrypt the following sentence using Caesar cipher where $C_i = P_i + 7$.

"Oh what a beautiful sunshine"

In your answer, copy the following table to show how you did your encryption.

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z

[5 marks]

b) Briefly describe TWO (2) types of individual protection for files. [2 marks]

c) Aside from using username and password for authentication in a computer, suggest THREE (3) other types of information which can be used for authentication. [3 marks]

[Total = 5 + 2 + 3 = 10 marks]

Continued ...

Question 5 (10 Marks)

a) Define Physical database integrity. [2 marks]

b) Suggest TWO (2) situations which can affect the integrity of the database. [2 marks]

c) Briefly describe THREE (3) methods of protecting database element integrity. [3 marks]

d) Suggest THREE (3) examples of common network threats. [3 marks]

[Total = 2 + 2 + 3 + 3 = 10 marks]

Question 6 (10 Marks)

a) Define Risk Impact. [2 marks]

b) Briefly explain the roles of PKI (Public Key Infrastructure). [5 marks]

c) Give THREE (3) disadvantages of Risk Analysis. [3 marks]

[Total = 2 + 5 + 3 = 10 marks]

Continued ...

Question 7 (10 Marks)

a) What is the difference between law and ethics. [6 marks]

b) Please provide a proper means of legal protection that can be applied for the following scenarios. Justify your answer.

i) An IT engineer, Johannes is inventing a new app and would like to know of any means of legal protection before releasing it for implementation

ii) Heena has developed a new exercise tool and she wants to start a business selling it.

[4 marks]

[Total = 6 + 4 = 10 marks]

END OF EXAM PAPER